

## **AUDIT ENERGI UNTUK EFISIENSI LISTRIK DI GEDUNG A UNIVERSITAS DIAN NUSWANTORO SEMARANG**

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### **ABSTRAK**

Makin berkurangnya ketersediaan sumber daya energi fosil, khususnya minyak bumi, yang sampai saat ini masih merupakan tulang punggung dan komponen utama penghasil energi listrik di Indonesia, serta makin meningkatnya kesadaran akan usaha untuk melestarikan lingkungan, menyebabkan kita harus berpikir untuk mencari alternatif penyediaan energi listrik yang memiliki karakter dapat mengurangi ketergantungan terhadap pemakaian energi fosil. Berdasarkan Inpres No. 10 Tahun 2005 tentang penghematan energi, perlu dilakukan manajemen energi agar penggunaan energi terutama energi listrik menjadi lebih efisien.

Dalam manajemen energi terdapat beberapa tahapan yang dilakukan diantaranya survey energi, audit energi awal serta audit energi rinci. Manfaat yang didapatkan setelah melakukan audit energi yaitu mengetahui profil penggunaan energi di Universitas serta mencari peluang penghematan energi agar pemakaian energi lebih efisien.

Audit energi merupakan kegiatan yang dilakukan bertujuan untuk mengetahui tingkat pemakaian energi pada suatu gedung. Dari hasil audit, diketahui bahwa intensitas konsumsi energi pendingin atau AC gedung A Universitas Dian Nuswantoro Semarang berada di angka 18,58257315 KWh/m<sup>2</sup>/bln dan pada pencahayaan pemakaian energi sebesar 37,281 KWh hanya dapat memberikan pencahayaan rata-rata tiap ruang sebesar 58,449 E(lux). Sesuai dengan standar yang telah ditetapkan oleh pemerintah angka tersebut masuk dalam kategori boros.

Berdasarkan hasil tersebut terdapat peluang penghematan energi yang dapat dilakukan Universitas yaitu alternatif penghematan yang direkomendasikan pada Universitas adalah penggantian lampu LED, pemakaian energi sesuai Peraturan Menteri ESDM No. 13 tahun 2012 tentang Penghematan Pemakaian Tenaga Listrik dan mematikan AC setengah jam sebelum kegiatan mulai dan setengah jam sebelum kegiatan selesai.

Kata Kunci : Kata kunci: Audit Energi, Intensitas Konsumsi Energi, Manajemen Energi.

## **ENERGY AUDIT FOR ELECTRICITY EFFICIENCY IN BUILDING A DIAN NUSWANTORO SEMARANG UNIVERSITY**

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### **ABSTRACT**

The decreasing availability of fossil energy resources, especially petroleum, which is still the backbone and main components producing electrical energy in Indonesia, and the ever increasing awareness of the effort to preserve the environment, causing us to have to think to look for alternative supply of electrical energy has the character to reduce reliance on fossil energy consumption. The decreasing availability of fossil energy resources, especially petroleum, which is still the backbone and main components producing electrical energy in Indonesia, and the ever increasing awareness of the effort to preserve the environment, causing us to have to think to look for alternative supply of electrical energy has the character to reduce reliance on fossil energy consumption. Based on Presidential Decree No. 10 Year 2005 on energy savings, energy management needs to be done so that the use of energy, especially electrical energy more efficiently.

In energy management there are several steps being taken include energy survey, the initial energy audit as well as a detailed energy audit. The benefits obtained after conducting energy audits which determine the profile of energy use at the University as well as the search for energy savings opportunities in order to use energy more efficiently.

Energy audit is an activity that aims to determine the level of energy consumption in a building. From the results of the audit, it is known that the intensity of the energy consumption of refrigeration or air conditioning of buildings A University Dian Nuswantoro Semarang stands at 18.58257315 KWh / m<sup>2</sup> / month and in lighting energy consumption amounted to 37.281 KWh can only provide an average lighting of the space of 58.449 E ( lux). In accordance with the standards set by the government figures were included in the category wasteful.

Based on these results there are energy savings opportunities that can be done, namely the University of the recommended alternative to savings at the University is the replacement of LED lights, energy consumption corresponding ESDM Minister Regulation No. 13 of 2012 on Saving Power Consumption and off the air conditioner half an hour before the event starts and finishes half an hour before the activity.

**Keyword** : Keywords: Energy Audit, Energy Consumption Intensity, Energy Management.